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REMARKS

Reconsideration and further examination is respectfully requested. Claims 1-15 are currently pending.

Rejections under 35 U.S.C. §112, second paragraph

Claims 1, 6, and 11 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended claims 1, 6 and 11 to overcome this rejection, in particular to clarify that the first label and second label are associated with the same Forwarding Equivalency Class (FEC). Accordingly, it is respectfully requested that this rejection is overcome and should be withdrawn.

Rejection under 35 U.S.C. §102

Claim 17 was rejected under 35 U.S.C. §102 as being anticipated by Ericsson, Martin van der Zee, July, pages 1-54 (Zee hereafter). Applicants have cancelled claim 17, and thus submit that this rejection is overcome.

Rejections under 35 U.S.C. §103

Claims 1-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over MPLS Study Project: Competence Center for ATM Components, Roth et al., Research Institute of Open

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Communication Systems, pages 1-42 (referred to as Roth hereafter) in view of Network Working Group Internet Draft (NWGID): A proposed Architecture for MPLS, Rosen, E. et. al., Aug 1997, pages 1-59 (Rosen hereafter).

Combination of references fails to disclose or suggest the claimed invention

In order to support a rejection under 35 U.S.C. §103, every limitation in the claims should be shown or suggested in the combination of references. In addition, portions of the references which teach away from the claimed invention need to be considered when determining the scope of the prior art.

An important distinction between the claimed invention and the prior art is the fact that the method and apparatus of the claimed invention allows multi-protocol label switching to be performed across autonomous domains without the use of a multi-protocol label stack. Applicants have amended the claims to more particularly highlight this distinction over the references cited by the Examiner.

For example, Claim 1, as amended, now recites "...A method for establishing a label switched path across multiple autonomous systems *without the use of a multi-label stack*, the method comprising ... storing, in a memory at a border router coupling a first autonomous system to a second autonomous system, a mapping of a first label associated with a last hop forwarding equivalency class (FEC) of the first autonomous system to a second label associated with a first hop in the second autonomous system, the second label associated with the last hop FEC of the first autonomous system; receiving from said first autonomous system *a protocol message including a single label stack comprised of said first label; replacing said first label in the single label stack with said second label in said protocol message*; and forwarding said single label

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stack protocol message to a downstream neighboring (next hop) device in said second autonomous system..."

No such structure is shown or suggested in the combination of Roth and Rosen. In fact, Rosen discloses, in section 2.11:

2.11. Label Switched Path (LSP), LSP Ingress, LSP Egress

A "Label Switched Path (LSP) of level m" for a particular packet P is a sequence of LSRs,

$\langle R_1, \dots, R_n \rangle$

with the following properties:

1. R_1 , the "LSP Ingress", pushes a label onto P's label stack, resulting in a label stack of depth m;
2. For all i , $1 < i < n$, P has a label stack of depth m when received by R_i ;
3. At no time during P's transit from R_1 to $R(n-1)$ does its label stack ever have a depth of less than m;
4. For all i , $1 < i < n$: R_i transmits P to $R(i+1)$ by means of MPLS, i.e., by using the label at the top of the label stack (the level m label) as an index into an FLM;

Thus Rosen describes stacked MPLS labels. With regard to what occurs at an egress point, Rosen states:

In other words, we can speak of the level m LSP for Packet P as the sequence of LSRs:

1. which begins with an LSR (an "LSP Ingress") that pushes on a level m label,
2. all of whose intermediate LSRs make their forwarding decision by label Switching on a level m label,
3. which ends (at an "LSP Egress") when a forwarding decision is made by label Switching on a level m-k label, where $k > 0$, or when a forwarding decision is made by "ordinary", non-MPLS forwarding procedures.

A consequence (or perhaps a presupposition) of this is that whenever an LSR pushes a label onto an already labeled packet, it needs to make sure that the new label corresponds to a FEC whose LSP Egress is the LSR that assigned the label which is now second in the stack.

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The Examiner admits, at page 4 of the office action that 'Roth does not explicitly teach where the border router support inter-domain routing protocol for the communication between autonomous switching are label switching compatible', and thus Applicants submit that the combination of Roth and Rosen together fails to teach a system such as that recited in independent claims 1, 6 and 11, which uses multi-protocol label switching across autonomous systems without the use of a multi-label stack.

Accordingly, for at least the reason that the combination of references fails to describe or suggest every limitation of claims 1, 6 and 11, the claims are patentable over the art and the rejection should be withdrawn. Dependent claims 2-5, 7-10 and 12-15 serve to add further patentable limitations to their parent claims, and are allowable for at least the same reasons as the parent independent claims.

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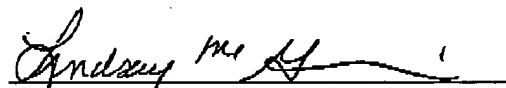
Conclusion

Applicants would like to thank the Examiner for the careful consideration that has been afforded to this application and for the Examiner's indicated willingness to combine efforts with the Applicant to find means of accelerating this application. Applicants believe that the above amendments are sufficient to distinguish the claimed invention from the prior art, but would welcome an interview with the Examiner to discuss other means of distinguishing the invention.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Lindsay McGuinness, Applicants' Attorney at (978) 264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,


Lindsay McGuinness, Reg. No. 38,549
Attorney/Agent for Applicant(s)
Steubing, McGuinness & Manaras LLP
125 Nagog Park Drive
Acton, MA 01720
(978) 264-6664

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